

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PHNL040504WO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/IB2004/050904	International filing date (<i>day/month/year</i>) 15 June 2004 (15.06.2004)	Priority date (<i>day/month/year</i>) 19 June 2003 (19.06.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KONINKLIJKE PHILIPS ELECTRONICS N.V.			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 740 14 35</p>	<p>Date of issuance of this report 23 January 2006 (23.01.2006)</p> <p>Authorized officer <div style="text-align: center; font-weight: bold;">Idhir Britel</div></p> <p>Telephone No. +41 22 338 70 60</p>
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PATENT COOPERATION TREATY

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From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2004/050904

International filing date (day/month/year)
15.06.2004

Priority date (day/month/year)
19.06.2003

International Patent Classification (IPC) or both national classification and IPC
H01J61/28, H01J61/72

Applicant
KONINKLIJKE PHILIPS ELECTRONICS N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2004/050904

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2004/050904

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	1-12
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: GB-A-1 062 141 (WESTINGHOUSE ELECTRIC CORPORATION) 15 March 1967 (1967-03-15)
D2: PATENT ABSTRACTS OF JAPAN vol. 011, no. 077 (E-487), 7 March 1987 (1987-03-07) & JP 61 232548 A (MATSUSHITA ELECTRIC IND CO LTD), 16 October 1986 (1986-10-16)

1. Claim 1

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

1. A low-pressure mercury vapor discharge lamp (p1, l12,13) comprising: a light-transmitting discharge vessel (p3, l23,24) enclosing, in a gastight manner, a discharge space (29, fig. 1) provided with a filling of mercury and a rare gas (p3, l35-37), the discharge vessel comprising discharge means for maintaining a discharge in the discharge space (p3, l26-30), the discharge vessel being provided with a container comprising an amalgam (the assembly 40 with amalgam 44 sandwiched between strips 42,43; cf. fig. 4, p3, 58-63), the container being provided with releasing means for the controlled release of mercury vapor from the amalgam (the amalgam essembly 40e for mercury release, temperature controlled means of a structure employing bimetals 59, 61, figs. 17-19, refer to p6, l43-82), the releasing means being open during lamp operation (the amalgam assembly 40e is open during lamp operation).

1.1 Novelty

The subject-matter of claim 1 differs from D1 in that:

the releasing means is substantially *closed* when, during lamp operation, the temperature of the amalgam becomes *higher* than a pre-determined temperature, whereas in the lamp of D1 the release of mercury vapor from the amalgam is controlled by moving the amalgam container towards or away from the electrode 32e and wherein the amalgam container does not comprise an open/close function.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

1.2 Inventive step

The technical effect of the releasing means of claim 1 is that, above a certain temperature, the release of mercury is reduced to zero, thus even more effectively avoiding unwanted mercury release at high temperatures. The problem to be solved by the difference may be regarded as to find an alternative way of regulating the release of mercury from the amalgam, wherein the release of amalgam above a pre-determined temperature is further reduced.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

as D1 does not feature a container with an open/close function, the skilled person would not consider the use of such a container to further reduce unwanted mercury release at high temperatures. Instead, the skilled person would rather resort to extending the range of movement by the bimetal, or try to reduce the temperature of the "cool" region.

although the prior art for similar lamps D2 shows a means for the release of mercury from the amalgam featuring an amalgam container which has an open/close function based on a shape-memory alloy triggered by a threshold temperature, the skilled person would not consider this option, as this means is used for a different purpose, namely the release of mercury upon finish of the evacuation process respectively upon termination of service life to allow easy collection of mercury (abs and figs). Moreover, this container differs from the claimed container also in that it functions by opening *above* a predetermined temperature and *closing* below this temperature.

Claims 2-12 are dependent on claim 1 and as such also meet the requirements of the PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2004/050904

with respect to novelty and inventive step.